CLAIMS:

1.   A method for generating a compact difference result between an old program and a new program; each program including reference entries that contain reference that refer to other entries in the program; the method
5   comprising the steps of:

(a)   scanning the old program and for substantially each reference entry perform steps that include:

(i)   replacing the reference of said entry by a distinct label mark, whereby a modified old program is generated;

10   (b)   scanning the new program and for substantially each reference entry perform steps that include:

(i)   replacing the reference of said entry by a distinct label mark, whereby a modified new program is generated;

(c)   generating said difference result utilizing directly or indirectly at
15   least said modified old program and modified new program.

2.   The method of Claim 1, further comprising the step of:

(d)   transmitting said compact difference result over a communication network.

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3.   The method of Claim 2, wherein said network includes the Internet.

4.   The method of Claim 1, further comprising the step of:

(d)   storing said compact difference result on a storage medium.

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5.   A method for performing an update in an old program so as to generate a new program; each program including reference entries that contain reference that refer to other entries in the program; the method comprising the steps of:

30   (a)   receiving data that includes a compact difference result; said compact

difference result was generated utilizing a modified old program and a modified new program;

(b) scanning the old program and for substantially each reference entry perform steps that include:

    (i) replacing the reference of said entry by a distinct label mark, whereby the modified old program is generated;

(c) reconstituting the modified new program utilizing at least said compact difference result and said modified old program; said modified new program is differed from said new program at least in that substantially each reference entry in said new program is replaced in said modified new program by a distinct label mark;

(d) reconstituting said new program utilizing directly or indirectly at least said compact difference result and said modified new program.

6. The method of Claim 5, wherein said data is received in step (a) from a remote site through a network.

7. The method of Claim 6, wherein said network includes the Internet.

8. A method for generating a compact difference result between an old program and a new program; each program including reference entries that contain reference that refer to other entries in the program; the method comprising the steps of:

    (a) generating a modified old program utilizing at least said old program;

    (b) generating a modified new program utilizing at least said new program, said modified old program and modified new program have at least the following characteristics:

        (i) substantially each reference in an entry in said old program that is different than corresponding entry in said new program due to

delete/insert modifications that form part of the transition between said old program and new program are reflected as invariant references in the corresponding entries in said modified old and modified new programs;

    (c) generating said compact difference result utilizing at least said modified new program and modified old program.

9. The method of Claim 8, further comprising the step of:

    (d) transmitting said compact difference result over a communication network.

10. The method of Claim 9, wherein said network includes the Internet.

11. The method of Claim 8, further comprising the step of:

    (d) storing said compact difference result on a storage medium.

12. A method for performing an update in an old program so as to generate a new program; each program including reference entries that contain reference that refer to other entries in the program; the method comprising the steps of:

    (a) receiving data that includes a compact difference result; said compact difference result was generated utilizing a modified old program and a modified new program;

    (b) generating a modified old program utilizing at least said old program;

    (c) reconstituting a modified new program utilizing directly or indirectly at least said modified old program and said compact difference result; said modified old program and modified new program have at least the following characteristics:

        (i) substantially each reference in an entry in said old program that is different than corresponding entry in said new program due to

delete/inset modifications that form part of the transition between said old program and new program are reflected as invariant references in the corresponding entries in said modified old and modified new programs;

5   **(d)** reconstituting said new program utilizing directly or indirectly at least said compact difference result and said modified new program.

13. The method of Claim 5, wherein said data is received in step (a) from a storage medium.

14. A system for generating a compact difference result between an old program and a new program; each program including reference entries that contain reference that refer to other entries in the program; the system comprising a processing device capable of:

15   **(a)** scanning the old program and for substantially each reference entry perform steps that include:

         (i) replacing the reference of said entry by a distinct label mark, whereby a modified old program is generated;

      (b) scanning the new program and for substantially each reference entry

20   perform steps that include:

         (i) replacing the reference of said entry by a distinct label mark, whereby a modified new program is generated;

      (c) generating said difference result utilizing directly or indirectly at least said modified old program and modified new program.

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15. The system of Claim 14, wherein said processor device is further capable of transmitting said compact difference result over a communication network.

16. The system of Claim 15, wherein said network includes the Internet.

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17. The system of Claim 14, wherein said processor device is further capable of storing said compact difference result on a storage medium.

18. A system for performing an update in an old program so as to generate a new program; each program including reference entries that contain reference that refer to other entries in the program; the system comprising a processing device capable of:

    (a) receiving data that includes a compact difference result; said compact difference result was generated utilizing a modified old program and a modified new program;

    (b) scanning the old program and for substantially each reference entry perform steps that include:

        (i) replacing the reference of said entry by a distinct label mark, whereby the modified old program is generated;

    (c) reconstituting the modified new program utilizing at least said compact difference result and said modified old program; said modified new program is differed from said new program at least in that substantially each reference entry in said new program is replaced in said modified new program by a distinct label mark;

    (d) reconstituting said new program utilizing directly or indirectly at least said compact difference result and said modified new program.

19. The system of Claim 18, wherein said data is received from a remote site through a network.

20. The system of Claim 19, wherein said network includes the Internet.

21. A system for generating a compact difference result between an old program and a new program; each program including reference entries that contain reference that refer to other entries in the program; the system comprising

a processing device capable of :

   (a) generating a modified old program utilizing at least said old program;

   (b) generating a modified new program utilizing at least said new program, said modified old program and modified new program have at least the following characteristics:

      (i) substantially each reference in an entry in said old program that is different than corresponding entry in said new program due to delete/insert modifications that form part of the transition between said old program and new program are reflected as invariant references in the corresponding entries in said modified old and modified new programs;

   (c) generating said compact difference result utilizing at least said modified new program and modified old program.

22. The system of Claim 21, wherein said processor is further capable of transmitting said compact difference result over a communication network.

23. The system of Claim 22, wherein said network includes the Internet.

24. The system of Claim 21, wherein said processor is further capable of storing said compact difference result on a storage medium.

25. A system for performing an update in an old program so as to generate a new program; each program including reference entries that contain reference that refer to other entries in the program; the system comprising a processing device capable of :

(a) receiving data that includes a compact difference result; said compact difference result was generated utilizing a modified old program and a modified new program;

(b) generating a modified old program utilizing at least said old program;

(c) reconstituting a modified new program utilizing directly or indirectly at least said modified old program and said compact difference result; said modified old program and modified new program have at least the following characteristics:

    (i) substantially each reference in an entry in said old program that is different than corresponding entry in said new program due to delete/inset modifications that form part of the transition between said old program and new program are reflected as invariant references in the corresponding entries in said modified old and modified new programs;

(d) reconstituting said new program utilizing directly or indirectly at least said compact difference result and said modified new program.

26. The system of Claim 18, wherein said data is received in step (a) from a storage medium.

27. A processing device having associated therewith a storage medium which holds compact difference result data that was generated by the method of anyone of Claims 1 to 4.

28. A processing device having associated therewith a storage medium which holds compact difference result data that was generated by the method of anyone of Claims 8 to 11.

29. The method of Claim 12, wherein said data is received in step (a) from a remote site through a network.

30. The method of Claim 29, wherein said network includes the Internet.

5 **31.** The method of Claim 12, wherein said data is received in step (a) from a storage medium.

32. The system of Claim 25, wherein said data is received in step (a) from a remote site through a network.

33. The system of Claim 32, wherein said network includes the Internet.

10 **34.** The system of Claim 25, wherein said data is received in step (a) from a storage medium.

35. A method for generating a compact difference result between an old data table and a new data table; each data table including reference entries that contain reference that refer to other entries in the data table; the method comprising the

15 steps of:

    (a) scanning the old data table and for substantially each reference entry perform steps that include:

        (i) replacing the reference of said entry by a distinct label mark, whereby a modified old data table is generated;

20   **(b)** scanning the new data table and for substantially each reference entry perform steps that include:

        (i) replacing the reference of said entry by a distinct label mark, whereby a modified new data table is generated;

    (c) generating said difference result utilizing directly or indirectly at

25   least said modified old data table and modified new data table.

36. The method of Claim 35, further comprising the step of:

    (d) transmitting said compact difference result over a communication network.

37. The method of Claim 36, wherein said network includes the Internet.

38. The method of Claim 35, further comprising the step of:

    (d) storing said compact difference result on a storage medium.

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39. A method for performing an update in an old data table so as to generate a new data table; each data table including reference entries that contain reference that refer to other entries in the data table; the method comprising the steps of:

10   **(a)** receiving data that includes a compact difference result; said compact difference result was generated utilizing a modified old data table and a modified new data table;

    (b) scanning the old data table and for substantially each reference entry perform steps that include:

15   **(i)** replacing the reference of said entry by a distinct label mark, whereby the modified old data table is generated;

    (c) reconstituting the modified new data table utilizing at least said compact difference result and said modified old data table; said modified new data table is differed from said new data table at least in 20 that substantially each reference entry in said new data table is replaced in said modified new data table by a distinct label mark;

    (d) reconstituting said new data table utilizing directly or indirectly at least said compact difference result and said modified new data table.

25   **40.** The method of Claim 39, wherein said data is received in step (a) from a remote site through a network.

41. The method of Claim 40, wherein said network includes the Internet.

42. A method for generating a compact difference result between an old data table and a new data table; each data table including reference entries that contain reference that refer to other entries in the data table; the method comprising the
5   steps of:

   (a) generating a modified old data table utilizing at least said old data table;

   (b) generating a modified new data table utilizing at least said new data table, said modified old data table and modified new data table have at
10   least the following characteristics:

      (i) substantially each reference in an entry in said old data table that is different than corresponding entry in said new data table due to delete/insert modifications that form part of the transition between said old data table and new data table are reflected as
15   invariant references in the corresponding entries in said modified old and modified new data tables;

   (c) generating said compact difference result utilizing at least said modified new data table and modified old data table.

20 43. The method of Claim 42, further comprising the step of:

   (d) transmitting said compact difference result over a communication network.

44. The method of Claim 43, wherein said network includes the Internet.
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45. The method of Claim 42, further comprising the step of:

   (d) storing said compact difference result on a storage medium.

46. A method for performing an update in an old data table so as to generate a new data table; each data table including reference entries that contain reference that refer to other entries in the data table; the method comprising the steps of:

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(a) receiving data that includes a compact difference result; said compact difference result was generated utilizing a modified old data table and a modified new data table;

(b) generating a modified old data table utilizing at least said old data table;

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(c) reconstituting a modified new data table utilizing directly or indirectly at least said modified old data table and said compact difference result; said modified old data table and modified new data table have at least the following characteristics:

(i) substantially each reference in an entry in said old data table that is different than corresponding entry in said new data table due to delete/inset modifications that form part of the transition between said old data table and new data table are reflected as invariant references in the corresponding entries in said modified old and modified new data tables;

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(d) reconstituting said new data table utilizing directly or indirectly at least said compact difference result and said modified new data table.

47. The method of Claim 39, wherein said data is received in step (a) from a storage medium.

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48. A system for generating a compact difference result between an old data table and a new data table; each data table including reference entries that contain reference that refer to other entries in the data table; the system comprising a
5 processing device capable of:

    (a) scanning the old data table and for substantially each reference entry perform steps that include:

        (i) replacing the reference of said entry by a distinct label mark, whereby a modified old data table is generated;

10   **(b)** scanning the new data table and for substantially each reference entry perform steps that include:

        (i) replacing the reference of said entry by a distinct label mark, whereby a modified new data table is generated;

    (c) generating said difference result utilizing directly or indirectly at
15 least said modified old data table and modified new data table.

49. The system of Claim 48, wherein said processor device is further capable of transmitting said compact difference result over a communication network.

20 **50.** The system of Claim 49, wherein said network includes the Internet.

51. The system of Claim 48, wherein said processor device is further capable of storing said compact difference result on a storage medium.

25 **52.** A system for performing an update in an old data table so as to generate a new data table; each data table including reference entries that contain reference that refer to other entries in the data table; the system comprising a processing device capable of :

    (a) receiving data that includes a compact difference result; said compact
30   difference result was generated utilizing a modified old data table and

a modified new data table;

(b) scanning the old data table and for substantially each reference entry perform steps that include:

    (i) replacing the reference of said entry by a distinct label mark, whereby the modified old data table is generated;

(c) reconstituting the modified new data table utilizing at least said compact difference result and said modified old data table; said modified new data table is differed from said new data table at least in that substantially each reference entry in said new data table is replaced in said modified new data table by a distinct label mark;

(d) reconstituting said new data table utilizing directly or indirectly at least said compact difference result and said modified new data table.

53. The system of Claim 52, wherein said data is received from a remote site through a network.

54. The system of Claim 53, wherein said network includes the Internet.

55. A system for generating a compact difference result between an old data table and a new data table; each data table including reference entries that contain reference that refer to other entries in the data table; the system comprising a processing device capable of :

(a) generating a modified old data table utilizing at least said old data table;

(b) generating a modified new data table utilizing at least said new data table, said modified old data table and modified new data table have at least the following characteristics:

    (i) substantially each reference in an entry in said old data table that is different than corresponding entry in said new data table due to delete/insert modifications that form part of the transition between said old data table and new data table are reflected as

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invariant references in the corresponding entries in said modified old and modified new data tables;

(c) generating said compact difference result utilizing at least said modified new data table and modified old data table.

56. The system of Claim 55, wherein said processor is further capable of transmitting said compact difference result over a communication network.

57. The system of Claim 56, wherein said network includes the Internet.

58. The system of Claim 55, wherein said processor is further capable of storing said compact difference result on a storage medium.

59. A system for performing an update in an old data table so as to generate a new data table; each data table including reference entries that contain reference that refer to other entries in the data table; the system comprising a processing device capable of :

(a) receiving data that includes a compact difference result; said compact difference result was generated utilizing a modified old data table and a modified new data table;

(b) generating a modified old data table utilizing at least said old data table;

(c) reconstituting a modified new data table utilizing directly or indirectly at least said modified old data table and said compact difference result; said modified old data table and modified new data table have at least the following characteristics:

(i) substantially each reference in an entry in said old data table that is different than corresponding entry in said new data table due to delete/inset modifications that form part of the transition

between said old data table and new data table are reflected as invariant references in the corresponding entries in said modified old and modified new data tables;

(d) reconstituting said new data table utilizing directly or indirectly at least said compact difference result and said modified new data table.

60. The system of Claim 59, wherein said data is received in step (a) from a storage medium.

61. A processing device having associated therewith a storage medium which holds compact difference result data that was generated by the method of anyone of Claims 35 to 38.

62. A processing device having associated therewith a storage medium which holds compact difference result data that was generated by the method of anyone of Claims 42 to 45.

63. The method of Claim 46, wherein said data is received in step (a) from a remote site through a network.

64. The method of Claim 63, wherein said network includes the Internet.

65. The method of Claim 46, wherein said data is received in step (a) from a storage medium.

66. The system of Claim 59, wherein said data is received in step (a) from a remote site through a network.

67. The system of Claim 66, wherein said network includes the Internet.

68. The system of Claim 59, wherein said data is received in step (a) from a storage medium.